COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC INVESTIGATION	**)**
INTO EXCESSIVE WATER LOSS BY	**)**
KENTUCKY'S JURISDICTIONAL	**) CASE NO. 2019-00041**
WATER UTILITIES	**)**

RESPONSE OF

FARMDALE WATER DISTRICT

TO

COMMISSION'S REQUEST FOR INFORMATION

DATED MARCH 12, 2019

FILED: April 12, 2019

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

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ELECTRONIC INVESTIGATION	**)**	
INTO EXCESSIVE WATER LOSS BY	**)**	
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WATER UTILITIES	**)**	

RESPONSE OF FARMDALE WATER DISTRICT TO COMMISSION'S REQUEST FOR INFORMATION

Comes Farmdale Water District, for its Response to the Commission's Request for Information, and states as shown on the following pages.

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Counsel for Farmdale Water District

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

ELECTRONIC INVESTIGATION	)
INTO EXCESSIVE WATER LOSS BY	)
KENTUCKY'S JURISDICTIONAL	) **CASE NO. 2019-00041**
WATER UTILITIES	)

CERTIFICATION OF RESPONSE OF FARMDALE WATER DISTRICT TO COMMISSION'S REQUEST FOR INFORMATION

This is to certify that I have supervised the preparation of Farmdale Water District's Responses to the Commission's Request for Information. The response submitted on behalf of Farmdale Water District is true and accurate to the best of my knowledge, information, and belief formed after a reasonable inquiry.

Date: 4/12/19

Brian Armstrong, Manager
Farmdale Water District

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 1

Responding Witness: Brian Armstrong

Q-1. Provide the utility's monthly unaccounted for loss water loss percentage report with associated underlying data from January 1, 2018, to the date of the issuance of this Order.

A-1.

Background. Farmdale Water District (Farmdale) provides water service to approximately **2,655 customers**. Almost all of these customers are located in the southwest portion of Franklin County. A small portion of Farmdale's service area extends into Anderson and Shelby Counties. It purchases all its water from the Frankfort Electric and Water Plant Board (Frankfort Plant Board). Thus, Farmdale is a distribution system. It does not resell any water to another water utility.

Historic Water Loss. Historically, Farmdale has kept its water loss at manageable levels. From 2010 through 2014, its water loss ranged from 20.5% to 27.5%. It never exceeded 27.5% until 2015 when it peaked at 41.6%. In 2016, Farmdale's water loss was 39.2% and in 2017 it was

35.9%. In 2018, it was reduced to 28.0%. The following summary is helpful:

Year	Water Loss Percentage
2018	28.0%
2017	35.9%
2016	39.2%
2015	41.6%
2014	22.7%
2013	26.1%
2012	20.5%
2011	27.5%
2010	23.1%

Water Loss Reports. Attached are the following Water Loss Reports:

2018 Water Loss Summary
2018 Annual Water Loss Summary Monthly Averages
2018 Monthly Water Loss Reports (January - December)
2019 Monthly Water Loss Report for January 2019
2019 Monthly Water Loss Report for February 2019

Large Leak Found in 2018. During 2015, 2016, and 2017, Farmdale's water loss got out of control. The percentage remained above 35%. Farmdale knew that it had extremely high water loss, but it could not locate the source or sources of the loss. Then, in January and February of 2018, the water loss climbed to over 50%. Fortunately, the source of the biggest leak was located – a 4-inch water main located about 15 feet below grade under

U. S. Highway 127 (a 4-lane highway). The water main under the highway was replaced. The system-wide water loss immediately dropped to **15%**.

2019 Leak. By January of 2019, Farmdale's water loss had risen to 37%. In February 2019, it was over 38%. Despite diligent efforts, Farmdale was unable to find the source or sources of the high water loss. On March 19, 2019, a customer reported a possible leak at 1410 South Benson Road. Farmdale immediately investigated and determined that the running water was potable water leaking from Farmdale's distribution system. **The water line was repaired the very next day**. Repairing this leak reduced Farmdale's water loss to less than 30%. Now the challenge is to start reducing the water loss until it is consistently below 20%. After that, efforts will be made to reduce it to less than 15% on a consistent basis.

FARMDALE WATER DISTRICT
2018 WATER LOSS

Month	Water Purchased	Water Sold	Other Water Used	Water Loss
January	23,402	11,630	-	11,772
February	22,474	10,819	-	11,655
March	15,227	12,923	9	2,295
April	17,475	11,139	14	6,322
May	18,106	14,414	18	3,674
June	15,472	14,143	-	1,329
July	16,281	13,664	150	2,467
August	16,273	14,854	-	1,419
September	18,545	13,666	45	4,834
October	16,938	14,853	23	2,062
November	18,185	10,917	70	7,198
December	17,318	11,884	-	5,434
Total	215,696	154,906	329	60,461

Annual Average Water Loss **28.03%**

Note: Volume amounts shown above are in thousands of gallons

PUBLIC SERVICE COMMISSION

Annual Water Loss Summary

Water Utility: Farmdale Water District

For the Year: 2018

MONTH	WATER LOSS %
JANUARY	50.3
FEBRUARY	51.9
MARCH	15.1
APRIL	36.2
MAY	20.3
JUNE	8.6
JULY	15.2
AUGUST	8.7
SEPTEMBER	26.1
OCTOBER	12.2
NOVEMBER	39.6
DECEMBER	31.4
TOTAL ANNUAL WATER LOSS %	28.0

The highest water loss was 51.9 and occurred in the month of DECEMBER

The lowest water loss was 8.6 and occurred in the month of JUNE

LEGEND

Water Loss is less that 15%
Water Loss is between 15% - 30%
Water Loss is greater than 30%

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: January Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	23,402	
4	**TOTAL PRODUCED AND PURCHASED**	23,402	
5			
6	**WATER SALES**		
7	Residential	9,693	
8	Commercial	1,937	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales		
13	**TOTAL WATER SALES**	11,630	49.7%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing		
19	Fire Department		
20	Other		
21	**TOTAL OTHER WATER USED**	-	0.0%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	11,772	
27	Other		
28	**TOTAL LINE LOSS**	11,772	50.3%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	50.3%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: February Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	22,474	
4	**TOTAL PRODUCED AND PURCHASED**	22,474	
5			
6	**WATER SALES**		
7	Residential	8,955	
8	Commercial	1,864	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	10,819	48.1%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	-	
19	Fire Department		
20	Other _____		
21	**TOTAL OTHER WATER USED**	-	0.0%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	11,655	
27	Other _____		
28	**TOTAL LINE LOSS**	11,655	51.9%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	51.9%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: March Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	15,227	
4	**TOTAL PRODUCED AND PURCHASED**	15,227	
5			
6	**WATER SALES**		
7	Residential	10,723	
8	Commercial	2,200	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	12,923	84.9%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	9	
19	Fire Department		
20	Other _____		
21	**TOTAL OTHER WATER USED**	9	0.1%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	2,295	
27	Other _____		
28	**TOTAL LINE LOSS**	2,295	15.1%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	15.1%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: April Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	17,475	
4	**TOTAL PRODUCED AND PURCHASED**	17,475	
5			
6	**WATER SALES**		
7	Residential	9,172	
8	Commercial	1,967	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	11,139	63.7%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	13	
19	Fire Department	1	
20	Other _____		
21	**TOTAL OTHER WATER USED**	14	0.1%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	6,322	
27	Other _____		
28	**TOTAL LINE LOSS**	6,322	36.2%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	36.2%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: May Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	18,106	
4	**TOTAL PRODUCED AND PURCHASED**	18,106	
5			
6	**WATER SALES**		
7	Residential	12,130	
8	Commercial	2,284	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	14,414	79.6%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	17	
19	Fire Department	1	
20	Other _____		
21	**TOTAL OTHER WATER USED**	18	0.1%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	3,674	
27	Other _____		
28	**TOTAL LINE LOSS**	3,674	20.3%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	20.3%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: June Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	15,472	
4	**TOTAL PRODUCED AND PURCHASED**	15,472	
5			
6	**WATER SALES**		
7	Residential	14,143	
8	Commercial		
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	14,143	91.4%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing		
19	Fire Department		
20	Other _____		
21	**TOTAL OTHER WATER USED**	-	0.0%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	1,329	
27	Other _____		
28	**TOTAL LINE LOSS**	1,329	8.6%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	8.6%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: July Year: 2018

LINE #	ITEM		GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**			
2	Water Produced			
3	Water Purchased		16,281	
4		**TOTAL PRODUCED AND PURCHASED**	16,281	
5				
6	**WATER SALES**			
7	Residential		11,362	
8	Commercial		2,302	
9	Industrial			
10	Bulk Loading Stations			
11	Wholesale			
12	Other Sales			
13		**TOTAL WATER SALES**	13,664	83.9%
14				
15	**OTHER WATER USED**			
16	Utility and/or Water Treatment Plant			
17	Wastewater Plant			
18	System Flushing			
19	Fire Department			
20	Other	Drain tank for inspection	150	
21		**TOTAL OTHER WATER USED**	150	0.9%
22				
23	**WATER LOSS**			
24	Tank Overflows			
25	Line Breaks			
26	Line Leaks		2,467	
27	Other			
28		**TOTAL LINE LOSS**	2,467	15.2%
29				
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4			
31				
32	**WATER LOSS PERCENTAGE**			
33	Unaccounted-For Water (Line 28 divided by Line 4)		15.2%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: August Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	16,273	
4	**TOTAL PRODUCED AND PURCHASED**	16,273	
5			
6	**WATER SALES**		
7	Residential	11,754	
8	Commercial	3,100	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	14,854	91.3%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing		
19	Fire Department		
20	Other _____		
21	**TOTAL OTHER WATER USED**	-	0.0%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	1,419	
27	Other _____		
28	**TOTAL LINE LOSS**	1,419	8.7%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	8.7%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: September Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	18,545	
4	**TOTAL PRODUCED AND PURCHASED**	18,545	
5			
6	**WATER SALES**		
7	Residential	10,924	
8	Commercial	2,742	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	13,666	73.7%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	45	
19	Fire Department		
20	Other _____		
21	**TOTAL OTHER WATER USED**	45	0.2%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	4,834	
27	Other _____		
28	**TOTAL LINE LOSS**	4,834	26.1%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	26.1%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: October Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	16,938	
4	**TOTAL PRODUCED AND PURCHASED**	16,938	
5			
6	**WATER SALES**		
7	Residential	11,753	
8	Commercial	3,100	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales		
13	**TOTAL WATER SALES**	14,853	87.7%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	23	
19	Fire Department		
20	Other		
21	**TOTAL OTHER WATER USED**	23	0.1%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	2,062	
27	Other		
28	**TOTAL LINE LOSS**	2,062	12.2%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	12.2%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: November Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	18,185	
4	**TOTAL PRODUCED AND PURCHASED**	18,185	
5			
6	**WATER SALES**		
7	Residential	8,880	
8	Commercial	2,037	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	10,917	60.0%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	32	
19	Fire Department	38	
20	Other _____		
21	**TOTAL OTHER WATER USED**	70	0.4%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	7,198	
27	Other _____		
28	**TOTAL LINE LOSS**	7,198	39.6%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	39.6%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: December Year: 2018

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	17,318	
4	**TOTAL PRODUCED AND PURCHASED**	17,318	
5			
6	**WATER SALES**		
7	Residential	9,166	
8	Commercial	2,718	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	11,884	68.6%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing		
19	Fire Department		
20	Other _____		
21	**TOTAL OTHER WATER USED**	-	0.0%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	5,434	
27	Other _____		
28	**TOTAL LINE LOSS**	5,434	31.4%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	31.4%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: January Year: 2019

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	17,469	
4	**TOTAL PRODUCED AND PURCHASED**	17,469	
5			
6	**WATER SALES**		
7	Residential	8,799	
8	Commercial	2,049	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	10,848	62.1%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	102	
19	Fire Department		
20	Other _____		
21	**TOTAL OTHER WATER USED**	102	0.6%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	6,519	
27	Other _____		
28	**TOTAL LINE LOSS**	6,519	37.3%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	37.3%	

PUBLIC SERVICE COMMISSION

Monthly Water Loss Report

Water Utility: Farmdale Water District

For the Month of: February Year: 2019

LINE #	ITEM	GALLONS (Omit 000's)	
1	**WATER PRODUCED, PURCHASED & DISTRIBUTED**		
2	Water Produced		
3	Water Purchased	16,855	
4	**TOTAL PRODUCED AND PURCHASED**	16,855	
5			
6	**WATER SALES**		
7	Residential	8,255	
8	Commercial	1,983	
9	Industrial		
10	Bulk Loading Stations		
11	Wholesale		
12	Other Sales _____		
13	**TOTAL WATER SALES**	10,238	60.7%
14			
15	**OTHER WATER USED**		
16	Utility and/or Water Treatment Plant		
17	Wastewater Plant		
18	System Flushing	127	
19	Fire Department	1	
20	Other _____		
21	**TOTAL OTHER WATER USED**	128	0.8%
22			
23	**WATER LOSS**		
24	Tank Overflows		
25	Line Breaks		
26	Line Leaks	6,489	
27	Other _____		
28	**TOTAL LINE LOSS**	6,489	38.5%
29			
30	Note: Line 13 + Line 21 + Line 28 Must Equal Line 4		
31			
32	**WATER LOSS PERCENTAGE**		
33	Unaccounted-For Water (Line 28 divided by Line 4)	38.5%	

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 2

Responding Witness: Brian Armstrong

Q-2. Describe in detail the procedure utilized in preparing monthly water use and loss reports, including, but not limited to, the following:

a. How the utility calculates water loss, water treatment plant usage, system flushing, and disinfection byproduct flushing.

b. Identify by name and job title employees who prepare or assist in the preparation of the reports.

c. What is included in the water loss category. Specifically, state whether the utility includes water loss from known leaks and breaks in the water loss category.

A-2.

a. Water loss is calculated by use of the PSC's monthly Water Loss Report form. Water sales, system flushing, and fire department usage are subtracted from water purchased to arrive at the amount of unaccounted for water.

Farmdale does not have a water treatment plant. Since early 2019, the system flushing and disinfectant byproduct flushing have been measured by the use of a fire hydrant meter. This meter is installed on

the fire hydrants that are used to perform system flushing. Prior to that, Farmdale used a formula provided by KRWA to calculate the amount of water used for flushing. The formula required us to input the flushing flow rate and time of flushing to determine gallons flushed.

b. The monthly line loss reports are now prepared by Farmdale's manager, Brian Armstrong.

c. The "Water Loss" category on the monthly Water Loss Report is the unaccounted for water. This category is the unaccounted for water after water sales, system flushing, and fire department usage have been subtracted from water purchased. Most of the time this unaccounted for water is shown on the monthly water loss report as line breaks or line leaks.

Farmdale does not include water loss from known leaks and breaks in the "Other Water Used" category. Only system flushing and fire department usage is deducted to arrive at the amount shown in the "Water Loss" category.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 3

Responding Witness: Brian Armstrong

Q-3. State whether the water utility has completed a water loss detection plan.

a. If the answer is yes, provide a copy of the last completed water loss detection plan.

b. If the answer is no, explain why a water loss detection plan has not been completed.

A-3.

a. Yes. Attached is Farmdale's Water Loss Prevention and Leak Detection plan. This is part of Farmdale's Distribution System Operation & Maintenance Manual.

b. N/A

WATER LOSS PREVENTION AND LEAK DETECTION

The goal of the water loss program is to reduce unaccounted-for water to 15% or less. In doing so, real and apparent losses must be addressed. Real loss consists of physical water losses from leaks, line breaks, tank overflows, etc. and places a financial and operational burden on the utility. Apparent loss consists of unauthorized consumption, customer metering inaccuracies, and errors in the meter reading and billing processes. This can result in overtime and wasted hours testing for leaks that are not real. Both types of loss must be addressed in order to meet the 15% goal.

Proper distribution management is the key to reducing water loss. Standard methods such as creating hydraulically isolated zones, accurate metering, pressure monitoring, tank performance, demand factoring and preventative maintenance are needed to identify real water loss.

The following plan outlines processes and procedures that Farmdale will conduct on a routine basis to identify and repair water line leaks, monitor water usage, eliminate tank overflows, to reduce its overall water loss.

1. Records

A. INFRASTRUCTURE: Knowledge of water system components and how they function under normal operating conditions is crucial to identifying where water loss occurs. Infrastructure inventory, maintenance and operational performance records are maintained where applicable.

- Water meters
- Water mains
- Service lines
- Valves
- Hydrants
- Storage tank

B. CUSTOMER: Billing and water usage data needs to be maintained as a historic record so that apparent losses can be identified.

- Meter readings
- Billing adjustments
- Count of active/in-active meters

- Total water usage by zone

2. Routine Procedures (Daily/Weekly/Monthly):

A. MASTER METERS: Read & record purchase meters from Frankfort.

B. RECORDING READINGS: Master meter readings are maintained in a spreadsheet.

C. METER READING SCHEDULES: Meters are read at approximately the same time each month.

D. FIELD PERSONNEL: All distribution personnel (meter readers, maintenance, etc.), shall immediately report any identified water leaks, tank overflows, or other concerns that are presently or could result in water leaks or loss. Water leaks, given the urgency of the problem reported are repaired immediately or at the earliest possible time,

E. OFFICE PERSONNEL: All office personnel shall immediately report any customer reported leaks, tank overflows, pressure problems, or other issues (whether during regular operational hours or after hours) to the Maintenance Foreman.

F. RECORDING DATA: Daily and monthly records (via computer data bases, manual logs, or spreadsheets) shall be maintained by appropriate personnel to record and analyze the following information:
   - Daily master meter readings
   - Pump station run times
   - Estimated water losses from line breaks, tank overflows, hydrant usage, flushing, etc.
   - Metered customer water sales by route

G. DATA ANALYSIS: Water production and usage data obtained and recorded (item F above) shall be evaluated and analyzed on a daily/weekly/monthly basis to determine:
   - Metered usage
   - Known losses from line breaks, etc.
   - Water loss by distribution zone
   - Focus on distribution system zones: As funding permits, additional master meters and by-pass meters will be installed to further isolate smaller portions of the

distribution system in order to more accurately identify and correct water loss problems in specific areas of the system.

H. METER TESTING AND REPLACEMENT: Customer meters will be tested every ten years to ensure that they are registering water accurately. Meters between 1" and 3" shall be tested every three years and meters larger than 4" shall be tested annually. All meters will be replaced, as warranted.

3. LEAK DETECTION PROCEDURES

A. FIELD PERSONNEL: On a routine basis, as system operations permit, the Water Works Supervisor will assemble a leak detection team to check the by-pass meter in each zone during a time when customer usage is minimal. This allows field personnel to go valve to valve (and often meter to meter) with listening devices and detect abnormal flows without affecting customer service. Personnel will perform leak detection in those areas with the highest known water loss, based on routine data collection and analysis.

B. OUTSIDE CONSULTANTS: Outside consultants such as Kentucky Rural Water, contract engineer or industry specialists are utilized as circumstances dictate.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 4

Responding Witness: Brian Armstrong

Q-4. State whether the water utility has completed a comprehensive unaccounted-for water loss reduction plan.

a. If the answer is yes, provide a copy of the last completed comprehensive unaccounted-for water loss reduction plan.

b. If the answer is no, explain why a comprehensive unaccounted-for water loss reduction plan has not been completed.

A-4.

a. Yes. Reference attachment to Q-3 response.

b. N/A

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 5

Responding Witness: Brian Armstrong

Q-5. Describe and provide the results of all water loss reduction projects that the water utility has initiated from January 1, 2015, to the date of the issuance of this Order.

A-5. Farmdale has undertaken two (2) major water loss reduction projects since 2015: (1) installation of Zone Meters; and (2) replacement of fire hydrants.

Zone Meters. In 2017, Farmdale engaged the services of HMB Professional Engineers, Inc. to design and supervise the bidding and installation of zone meters. The purpose of the project was to enable Farmdale to monitor the water demand within a specific zone and compare that to the water used by customers within that same zone. Farmdale's distribution system was divided into five (5) zones and a zone meter was installed for each zone. In addition, ten (10) by-pass meters were installed to monitor flows on certain water lines within a particular zone.

Unfortunately, because of limited staff and serious medical issues involving the former Manager's spouse, Farmdale has not yet reaped the benefits of the zone meters. The former Manager retired, unexpectedly, on August 31,2018 to care for his spouse. The new Manager has been with Farmdale since June 2018. There is only one (1) other "outside" employee to assist the Manager in operating and maintaining Farmdale's distribution system.

Fire Hydrant Replacements. Most of the fire hydrants located throughout Farmdale's distribution system were installed by developers who installed them as part of their subdivision developments. Both the water lines serving the subdivisions and the fire hydrants were donated to, and accepted by, Farmdale. The current Commissioners of Farmdale and its former Manager slowly began to realize that many of these fire hydrants might have been installed improperly (e.g. no gate valve to shut off the water going to the fire hydrant when not in use) or might need replacing for other reasons. As a result, they suspected that these fire hydrants could be a source of water leaks.

During the current Manager's short tenure, he has identified and replaced **27 fire hydrants** that were leaking or otherwise needed to be replaced. With the assistance of Farmdale's "on call" contractor, B. P. Pipeline LLC, all 27 of these fire hydrants have been replaced with new fire hydrants. Farmdale

will continue to replace faulty or leaking fire hydrants as they are discovered.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 6

Responding Witness: Brian Armstrong

Q-6. Provide a copy of the utility's most recent and updated annual and long-range Capital Improvement Plans.

A-6. Farmdale does not have a long-range Capital Improvement Plan. The Commissioners do realize, however, that Farmdale needs to replace all of its Asbestos Cement (AC) water mains as soon as financing becomes available.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 7

Responding Witness: Brian Armstrong

Q-7. Provide the names of the persons or entities responsible for assisting the utility with capital improvement planning, grant application assistance, engineering design, and construction services.

A-7. HMB Professional Engineers, Inc.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 8

Responding Witness: Brian Armstrong

Q-8. Provide a copy of the utility's preventative maintenance program for the plant, pump, and storage facilities.

A-8. See attached Preventative Maintenance Program. The attached document is part of Farmdale's Distribution System Operation & Maintenance Manual.

PREVENTATIVE MAINTENANCE PROGRAM

The purpose of Farmdale's preventative maintenance program is twofold: 1) to ensure that equipment is properly functioning so that it meets or exceeds its expected service life and 2) to identify maintenance trends that consume a great deal of the operator's time in order to reduce long term operational costs and improve system reliability. Without a sound preventative maintenance program, labor costs for lost water production time due to unscheduled equipment breakdown will be incurred, damage to equipment can be much more severe and potential negative treatment process and/or regulatory ramifications can be unacceptable to the customer and costly to the system. Therefore, three levels of maintenance activities will be performed. These are predictive, preventative and breakdown maintenance.

Predictive Maintenance

The goal of predictive maintenance to identify potential equipment failure before a breakdown occurs. This level of maintenance relies upon testing equipment performance and analyzing operational trends. Testing may include such items as oil analysis to determine optimal oil replacement frequency, infrared analysis to ensure that electrical connections are sound and that there are no imminent electric failures about to occur, and vibration analysis to ensure that equipment is properly aligned and that bearing wear is identified well before failure occurs.

Preventative Maintenance

The primary goal of preventative maintenance is to prevent the failure of pumps and equipment before it actually occurs. It is designed to preserve and enhance equipment reliability by replacing worn components before they actually fail. Preventative maintenance activities include exercising valves and fire hydrants; equipment and tank inspections; partial or complete overhauls at regular specified periods; oil changes; lubrication; and so on. In addition, operators can record equipment deterioration so they know to replace or repair worn parts before they cause system failure.

Breakdown Maintenance

This is maintenance that must be performed because of unexpected equipment failure and is the most disruptive and costly type of

maintenance. Even under the best preventative maintenance program, some breakdown maintenance will occur. Each of these events provides a learning opportunity to improve upon existing preventative maintenance programs. The operator should evaluate every equipment breakdown situation to determine the cause and what measures could have been taken to prevent the occurrence. The lessons learned should then be added to the preventative maintenance program. Building these written feedback loops into the preventative maintenance program will yield significant returns.

The Water Superintendent, in conjunction with certified operators, is responsible for implementing the preventative maintenance program. The water treatment and distribution operators are responsible for performing the maintenance and recordkeeping. Inspection forms and maintenance schedules are located in Appendix D, however a generalized list of maintenance measures are as follows:

- ✓ Mechanical appurtenances of pump stations i.e.; motors/pumps, that require greasing, oiling or cleaning will be done as recommended by the manufacturer by the operator.
    1. Daily visual to locate leaks, check runtime and pressures;
    2. Monthly functional inspection including: control valve operation, exercise switch modes, lubricate all related components; and
    3. Annual maintenance to include discharge, amperage and pressure measurement for pump curve analysis.

- ✓ Pressure Reducing Valves (PRVs) are critical to controlling system hydraulics and maintaining consistent customer service. PRVs should undergo visual and functional inspections and undergo annual maintenance as recommended in the manufacturer manual.
    4. Monthly visual inspection to locate leaks and external damages;
    5. Quarterly functional inspection including: closing, opening and regulation of the PRV and by-pass; and
    6. Annual maintenance including internal component inspection.

- ✓ Records will be retained at the District office. These records are to include the following:
    7. List of Specifications for fuels, lubricants, filters, etc. for equipment;
    8. Trouble shooting charts or guides which reference page numbers in manufacturer service manual;

9. Inventory for each type of equipment to include numbering system, catalog, nameplate data cards, maintenance record cards;

10. Manufacturer maintenance schedule for routine adjustments; A summary with references to page numbers in manufacturer O&M manual needs to be provided.

- ✓ Hydrants and valves will be inspected/exercised in concert with flushing program.

- ✓ Storage Tanks are on contract with Caldwell Tank, Inc. to be inspected every 5 years.

Appendix A
Flushing Record Form

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 9

Responding Witness: Brian Armstrong

Q-9. State whether the water utility has assigned specific personnel the responsibility to detect and fix of water line leaks, and if so, state the names and job titles of such personnel and describe the functions and duties of each.

A-9. Brian Armstrong, Manager, is responsible for detecting and fixing water line breaks. For large water main breaks, Farmdale utilizes a local contractor, B.P. Pipeline LLC. This contractor is "on call" and has assisted Farmdale with replacing fire hydrants and fixing large leaks.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 10

Responding Witness: Brian Armstrong

Q-10. State whether leak detection is conducted on a daily basis, and if not, state the reasons why not.

A-10. No, leak detection is not conducted on a daily basis. Farmdale has only two "outside" employees, including the manager. Thus, it does not have enough employees to dedicate one employee solely to conducting daily leak detections.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 11

Responding Witness: Brian Armstrong

Q-11. Provide the number of completed water line leak repairs by category, i.e., mains, service lines, etc. that were completed from September 1, 2018, to the date of the issuance of this Order.

A-11. Since September 1, 2018, Farmdale has repaired 13 water main leaks and made 10 service connection line repairs. (A service connection line is the line running from the water main to the customer meter.) In addition, 27 "leaking" fire hydrants have been replaced during this time period.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 12

Responding Witness: Brian Armstrong

Q-12. Provide copies of each work order generated to investigate leaks reported by customers of the utility from September 1, 2018, to the date of the issuance of this Order.

A-12. Copies of the work orders are attached.

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22397

DATE 10/4/18 TIME _____ AM PM

Cafego ADDRESS 265 Hwy 151 Loop 2

/ICE yes ____ no ____ CHECK VALVE yes ____ no ____

READ & ____ DISCONNECT ____ DATE ____ READING ____

ION OF WORK Leak on our side of meter

RFORMED _____

Y	MATERIAL USED	PRICE	AMOUNT
	Repaired 10/4/18		

LABOR	HOURS	RATE	AMOUNT

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
COMPLETED _____ LABOR _____
BACKHOE _____

ED _____

_____ TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22396

ACCT # _____ DATE 5-9-18 TIME _____ AM PM

NAME Mrs. Richardson ADDRESS 345 Hanks LN

LOCATION _____

NEW SERVICE yes ____ no ____ CHECK VALVE yes ____ no ____

READ & TURN ON ____ READ & DISCONNECT ____ DATE ____ READING ____

DESCRIPTION OF WORK Hydrant Leaking

WORK PERFORMED Checked out by RW

QUANTITY	MATERIAL USED	PRICE	AMOUNT
	Hydrant is Leaking		

DATE	LABOR	HOURS	RATE	AMOUNT

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
DATE JOB COMPLETED _____ LABOR _____
BACKHOE _____

DATE BILLED _____

DATE PAID _____ TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22400

DATE 3-11-19 TIME _____ AM PM

Ciso Ochoa-Diaz ADDRESS 1408 Briarpatch

321-9989

/ICE yes ____ no ____ CHECK VALVE yes ____ no ____

READ & READ &

____ DISCONNECT ____ DATE _____ READING _____

'ION OF WORK Check water on yard

RFORMED _____

Y	MATERIAL USED	PRICE	AMOUNT
	Sample taken to Lab 3/15/19		

	LABOR	HOURS	RATE	AMOUNT

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
COMPLETED _____ LABOR _____
BACKHOE _____

.ED _____

) _____ TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22443

15-01000-02

ACCT # _____ DATE 2/11/19 TIME _____ AM PM

NAME Michelle Welch ADDRESS _____

LOCATION 1517 Benson Valley

NEW SERVICE yes ____ no ____ CHECK VALVE yes ____ no ____

READ & READ &

TURN ON ____ DISCONNECT ____ DATE 2/11/19 READING _____

DESCRIPTION OF WORK Leak-Turned off at Customer's Request

WORK PERFORMED 1831847
IN Driveway 7495337

QUANTITY	MATERIAL USED	PRICE	AMOUNT
	No water service since Friday Feb 8 Please check to find out the problem		

DATE	LABOR	HOURS	RATE	AMOUNT

Plane
502-382-8975

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
DATE JOB COMPLETED _____ LABOR _____
BACKHOE _____

DATE BILLED _____

DATE PAID _____ TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22491

_____ DATE 3-14-19 TIME 3:50 AM (PM)

R.A. Elmer ADDRESS 21 Dove Creek

TION _____

SERVICE yes ____ no ____ CHECK VALVE yes ____ no ____

& READ &

ON ____ DISCONNECT ____ DATE ____ READING ____

RIPTION OF WORK Check — Sink hole close to Stop Sign at corner of Dove Creek and Mills Lane

K PERFORMED _____

NTITY	MATERIAL USED	PRICE	AMOUNT
	Possible Leak?		
4/19	Groundhog Tunnel Caved IN		
05pm	IS NOT a Leak BA		

	LABOR	HOURS	RATE	AMOUNT

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
LABOR _____
BACKHOE _____

E JOB COMPLETED _____

E BILLED _____

E PAID _____

TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22601

ACCT # _____ DATE 3-19-19 TIME _____ AM PM

NAME Joy Peach ADDRESS 1410 South Benson

LOCATION _____

NEW SERVICE yes ____ no ____ CHECK VALVE yes ____ no ____

READ & READ &

TURN ON ____ DISCONNECT ____ DATE ____ READING ____

DESCRIPTION OF WORK water running across the road from 1410 IN Feild

WORK PERFORMED May be our leak

QUANTITY	MATERIAL USED	PRICE	AMOUNT
Major	Leak repaired 3-20-19		

DATE	LABOR	HOURS	RATE	AMOUNT

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
LABOR _____
BACKHOE _____

DATE JOB COMPLETED _____

DATE BILLED _____

DATE PAID _____

TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22555

DATE 3/28/19 TIME _____ AM PM

ADDRESS 1200 Evergreen

/ICE yes ____ no ____ CHECK VALVE yes ____ no ____

READ &

____ DISCONNECT ____ DATE ____ READING ____

'ION OF WORK 3 Chlorine Samples were
tive, Talked To Home Owner They
ed They Think It May be from There
RFORMED Septic Lateral Line That Needs
epair or from the Pond Near the [redacted]
ad 3/29/19 Called concerned [redacted] Customer

Y	MATERIAL USED Left a message.	PRICE	AMOUNT
	Gary Scott called		
	to report		
	please check it out		
	Big Puddle of water in the road		

	LABOR	HOURS	RATE	AMOUNT
22	852436			

s not Mr.
's property
just noticed
every day.

COMPLETED _____

ED _____

) _____

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
LABOR _____
BACKHOE _____

TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT
100 HIGHWOOD DRIVE
FRANKFORT, KY 40601
PHONE (502) 223-3562

22553

01-13950-01

ACCT # _____ DATE 3/20/19 TIME _____ AM PM

NAME Debra Cunningham ADDRESS 231 Highwood Dr.

LOCATION _____

NEW SERVICE yes ____ no ____ CHECK VALVE yes ____ no ____

READ & READ &

TURN ON ____ DISCONNECT ____ DATE ____ READING ____

DESCRIPTION OF WORK _____

Leak Fixed 3/28/19

WORK PERFORMED _____

QUANTITY	MATERIAL USED	PRICE	AMOUNT
	Reported that water is		
	seeping out of the ground		

DATE	LABOR	HOURS	RATE	AMOUNT

320-6002

TAP ON INSTALLATION _____
DEPOSIT _____
CONNECTION FEE _____
MATERIALS _____
TAX _____
HANDLING _____
LABOR _____
BACKHOE _____

DATE JOB COMPLETED _____

DATE BILLED _____

DATE PAID _____

TOTAL AMT. DUE _____

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 13

Responding Witness: Brian Armstrong

Q-13. Does the utility have a policy or operating procedure in place that addresses the process and the length of time it should take for the utility to fix a known or reported leaking water line? If yes, provide a copy of the policy or operating procedure.

A-13. Farmdale does not have any written policy or procedure addressing this topic. Nevertheless, Farmdale's practice is to place a very high priority on fixing or repairing any reported water line leak.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 14

Responding Witness: Brian Armstrong

Q-14. Provide a general asset ledger listing identifying all new equipment purchased by the utility from January 1, 2018, to the date of the issuance of this Order used in water loss reduction efforts (e.g., listening devices, flow meters, metal detectors, hand tools, etc.).

A-14. Farmdale has purchased a fire hydrant meter to accurately measure the volume of water it flushes. In addition, it has purchased an AC pipe cutter to facilitate the repair of AC pipe leaks without endangering the health and safety of employees or the environment.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 15

Responding Witness: Brian Armstrong

Q-15. Provide the type of training and the total amount of time the utility's personnel have received for leak detection and repairs since January 1, 2015, to the date of the issuance of this Order. List the personnel and dates of training.

A-15. Farmdale's former manager, David Robinson, attended annual leak detection training classes taught by KRWA in April 2015, April 2016, and April 2017.

Farmdale's current manager, Brian Armstrong, received leak detection and repair training in December 2018 conducted by the Division of Compliance Assistance of the Kentucky Department for Environmental Protection.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 16

Responding Witness: Brian Armstrong

Q-16. Does the utility have a policy to identify errors that result in missed customer billings or under billings of customer accounts? If so, provide a copy of the policy.

A-16. Before the monthly customer bills are mailed, Farmdale's office staff reviews all bills for inaccuracies and abnormal usage and corrects any errors found. Farmdale does not have a written policy that addresses this subject.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 17

Responding Witness: Brian Armstrong

Q-17. If the utility produces and treats water for its distribution system, provide the date that the utility's water treatment plant meter was last tested and state how frequently the utility's water treatment plant meter is tested. Provide a copy of the most recent meter test results.

A-17. Farmdale does not produce or treat its water. It purchases all of its water from Frankfort Plant Board.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 18

Responding Witness: Brian Armstrong

Q-18. Provide the dates on which the utility's master meters were last tested and the results of the tests.

A-18. Farmdale does not have any master meters. Frankfort Plant Board supplies water to Farmdale through the use of three master meters: (1) 650 Evergreen Road; (2) Bentwoods Subdivision; and (3) Moss Lane. Frankfort Plant Board has these master meters tested on a regular basis. Copies of the Water Meter Inspection and Test Report and dates of testing are attached for each of the master meters.

The most recent Moss Lane report, dated April 2, 2019, notes that the meter failed the initial test. Frankfort Plant Board has ordered a new meter and will replace the malfunctioning master meter.

FRANKFORT PLANT BOARD

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: 650 Evergreen Rd **TEST DATE:** 4-1-19

OWNER: Farmdale Water District

F.P.B. Co. # 70252625 **MFG. #** 70252625

-TESTERS/ EMPLOYEE # 232/237

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
11/8/17	8"	Neptune Turbine	20"	10"	Y (N) On___ Off___	no
Type of Test Field Bench	**Water in pit** Y___ N/	**Electric in pit** Y/ N___	**Sump Pump** Y___ N/	**Ladder** Y___ N/	**Valves Operable** Y/ N___	**Pit clean** Y/ N___
TEST RESULTS:		**HIGH:** Test 1: 99.14 Test 2: Test 3:	**INTERM.** Test 1: 100.3 Test 2: Test 3:	**LOW** Test 1: 98.5 Test 2: Test 3:	**Before Reading**	**After Reading** 176507.000

Comments:

MID# 1486494604

Changed name now
Same register

Approved by: _____ **Date:** 4/1/19

FRANKFORT PLANT BOARD

BB

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: 650 Evergreen Rd pump house TEST DATE: 11-8-17

OWNER: Formdale water

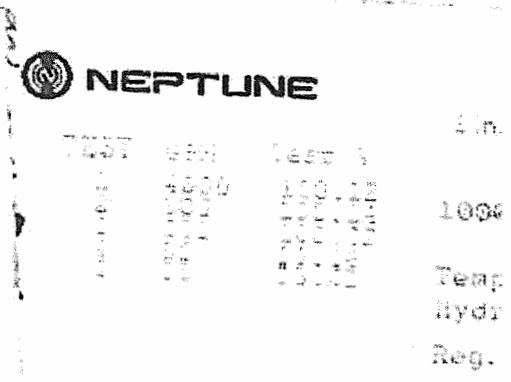
F.P.B. Co. # 9025625 MFG. # 70252625

-TESTERS/ EMPLOYEE # 232/ 234

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
	8"	Neptune Turbin	20	20	Y X On___ Off___	no
Type of Test (Field) Bench	Water in pit	Electric in pit	Sump Pump	Ladder	Valves Operable	Pit clean
	Y___ N X	Y X N___	Y___ N X	Y___ N X	Y X N___	Y X N___
TEST RESULTS:		HIGH: Test 1: 100.12 Test 2: Test 3:	INTERM. Test 1: 100.42 Test 2: Test 3:	LOW Test 1: 98.62 Test 2: Test 3:	Before Reading	After Reading 89425

Comments:

Changed meme



Approved by: _____ Date: _____

FRANKFORT PLANT BOARD

38

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: Bentwood Subdivision TEST DATE: 4-2-19

OWNER: Farmdale Water District

F.P.B. Co. # 70307154 MFG. # 70307154

-TESTERS/ EMPLOYEE #_____

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
8/7/15	4"	Neptune Compound	20"	7½"	(Y) N On___ Off___	
Type of Test Field Bench	Water in pit Y___ N✓	Electric in pit Y___ N✓	Sump Pump Y___ N✓	Ladder Y✓ N___	Valves Operable Y✓ N___	Pit clean Y✓ N___
TEST RESULTS:		HIGH: Test 1: 97%	INTERM. Test 1: 103%	LOW Test 1: 101.5%	Before Reading 621969 57847	After Reading 621979 57395
		Test 2: 100.42%	Test 2: 100%	Test 2: 101.5%		
		Test 3:	Test 3:	Test 3:		

Comments:

4" MIUH 1853135279

3/4" MIUH 1853135148

Cleaned strainer.
Changed w/ ME

Approved by: _____ Date: 4/2/19

FRANKFORT PLANT BOARD

BB

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: Bentwood Subdivision TEST DATE: 10-30-17

OWNER: Farmdale Water

F.P.B. Co. # 70307154 MFG. # 70307154

-TESTERS/ EMPLOYEE # 232/237

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
	4"	Neptune Compound	20"	7½"	⊗ N On___ Off___	Yes
Type of Test (field) Bench	**Water in pit** Y___ N✓	**Electric in pit** Y___ N✓	**Sump Pump** Y___ N✓	**Ladder** Y✓ N___	**Valves Operable** Y✓ N___	**Pit clean** Y✓ N___
TEST RESULTS:		**HIGH:** Test 1: 98.7 Test 2: Test 3:	**INTERM.** Test 1: 98.2 Test 2: Test 3:	**LOW** Test 1: 99.3 Test 2: Test 3:	**Before Reading** 38529833 9079453.23	**After Reading** 38530855.8 9079500.78

Comments:

4" meter 18531352794 ✓ P.I.T Top has a hole in the right corner.

¾" meter 18531351484 ✓ Cleaned strainer

Approved by: Brian Bowman Date: 11/6/17

FRANKFORT PLANT BOARD

BB

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: Bentwood Subv. TEST DATE: 10-17-16

OWNER: Farmdale water

F.P.B. Co. # 70311285 MFG. # Same

-TESTERS/ EMPLOYEE # 232/249

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
	4"	Neptune Compound	20"	2.5"	Y N On__ Off /	Yes

Type of Test (Field) Bench 75psi	Water in pit	Electric in pit	Sump Pump	Ladder	Valves Operable	Pit clean
	Y__ N /	Y__ N /	Y__ N /	Y / N__	Y / N__	Y / N__

TEST RESULTS:	HIGH:	INTERM.	LOW	Before Reading	After Reading
	Test 1: 98.4	Test 1: 101.0	Test 1: 100.0		3/4 98.04
	Test 2:	Test 2:	Test 2:		4" 22 90 18
	Test 3:	Test 3:	Test 3:		

Comments:

Cleaned Strainer

Changed registers for Test

Approved by: [signature] Date: 10-18-16

FRANKFORT PLANT BOARD

BB

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: Moss Ln TEST DATE: 4-2-14

OWNER: Farmdale Water District

F.P.B. Co. # 70103336 MFG. # 70103336

-TESTERS/ EMPLOYEE # 232/237

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
8/21/15	6"	Neptune Compound	24"	9"	(Y) N On___ Off___	
Type of Test (Field) Bench	Water in pit Y___ N✓	Electric in pit Y___ N✓	Sump Pump Y___ N✓	Ladder Y✓ N___	Valves Operable Y✓ N___	Pit clean Y✓ N___
TEST RESULTS:		HIGH: Test 1: 98.5 Test 2: Test 3:	INTERM. Test 1: 146.6 Test 2: Test 3:	LOW Test 1: 102.1 Test 2: Test 3:	Before Reading 41 85541	After Reading 42 85543

Comments:

6" MXU # 1834464974

1" MXU # 1834454663

Cleaned Strainer failed Test

Ordered New One

Approved by: _____ Date: 4/2/14

FRANKFORT PLANT BOARD

BB

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: Moss Ln TEST DATE: 9/6/18

OWNER: Farmdale Water District

F.P.B. Co. # 70103336 MFG. # 70103336

-TESTERS/ EMPLOYEE # 232/237

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
	6"	Neptune Compound	20"	9"	X N On ___ Off /	Yes
Type of Test (Field) Bench	Water in pit	Electric in pit	Sump Pump	Ladder	Valves Operable	Pit clean
	Y ___ N V	Y ___ N ✓	Y ___ N V	Y ✓ N ___	Y ✓ N ___	Y ✓ N ___
TEST RESULTS:		HIGH:	INTERM.	LOW	Before Reading	After Reading
		Test 1: 97.5	Test 1: 100.1	Test 1: 99.6	H: 28 LO 78379	H: 30 LO 78377
		Test 2:	Test 2:	Test 2:		
		Test 3:	Test 3:	Test 3:		

Comments:

Cleaned Strainer

Approved by: Brian Boone Date: 9/12/18

FRANKFORT PLANT BOARD

F.P.B. COLD WATER METER DEPARTMENT

WATER METER INSPECTION & TEST REPORT

LOCATION: Moss Ln **TEST DATE:** 10-5-17

OWNER: Farmdale water District

F.P.B. Co. # 70103336 **MFG. #** 70103336

TESTERS/ EMPLOYEE # 232/234

Date installed	Meter size	Meter brand & type	Length of meter	Length of strainer	Bypass	Air Quality Test
	6"	Neptune	24"	9"	(Y) N On___ Off X	YES
Type of Test Field Bench	**Water in pit**	**Electric in pit**	**Sump Pump**	**Ladder**	**Valves Operable**	**Pit clean**
	Y___ N X	Y___ N X	Y___ N X	Y X N___	Y X N___	Y X N___
TEST RESULTS:		**HIGH:**	**INTERM.**	**LOW**	**Before Reading**	**After Reading**
		Test 1: 101.4	Test 1: 102	Test 1: 99.2	66496701.0	66499833.05
		Test 2:	Test 2:	Test 2:		
		Test 3:	Test 3:	Test 3:	23187	23686

Comments:

Strainer clean

1" MIU - 1834454663

6" MIU - 1834464974

Approved by: [signature] Date: 10/9/17

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 19

Responding Witness: Brian Armstrong

Q-19. Provide the utility's procedure and schedule for testing its master meters and customer meters.

A-19. The master meters belong to Frankfort Plant Board. FPB usually tests the meters on an annual basis. Farmdale does not test its customer meters unless there is a customer complaint or a customer request. The customer meters are tested by C.I. Thornburg Company.

In 2012, Farmdale switched to "radio-read" and installed all new meters. Thus, the meters are less than ten (10) years old.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 20

Responding Witness: Brian Armstrong

Q-20. State the number of meters that have been replaced by the utility from January 1, 2018, to the date of the issuance of this Order.

A-20. Farmdale has replaced 30 customer meters that were damaged, malfunctioning, or otherwise defective.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 21

Responding Witness: Brian Armstrong

Q-21. Provide the type of metering equipment, including brands and model numbers, the utility uses.

A-21. Farmdale uses only Sensus manufactured meters. In 2012, all meters were replaced with iPERL meters. As the iPERL meters malfunction or become damaged, they are replaced with Sensus SR II meters.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 22

Responding Witness: Brian Armstrong

Q-22. State whether the utility utilizes supervisory control and data acquisition (SCADA) technology within its system.

A-22. Yes.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 23

Responding Witness: Brian Armstrong

Q-23. State whether the utility utilizes telemetry within its system.

A-23. Yes.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 24

Responding Witness: Brian Armstrong

Q-24. State whether all meters within the utility's distribution area are read monthly. If all meters are not read monthly state the reasons why not.

A-24. Farmdale has approximately 2,655 meters. All meters are read each month utilizing "radio-read" technology. Historically, approximately 160 meters each month had to be manually read because of malfunctioning data transmission. Farmdale has worked to decrease this number and between 30 and 40 of these meters have been replaced. Last month, only 120 meters had to be read manually.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 25

Responding Witness: Brian Armstrong

Q-25. What training is provided to the utility's meter readers?

A-25. On the job training

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 26

Responding Witness: Brian Armstrong

Q-26. Does the utility utilize master meter zones in leak detection? If yes, for each of the utility's master meter zones, provide a monthly comparison of the master meter readings to the total customer meter readings for that zone for December 2018 and January 2019.

A-26. Yes. Farmdale installed five (5) zone meters in 2017 to enhance its leak detection efforts. Attached are the monthly comparisons for each of the five (5) zone meters.

As stated in response to Q-5, however, Farmdale has not been able to fully take advantage of these zone meters because of limited personnel and the unexpected retirement of its former Manager in August 2018.

2018 WATER LOSS
BY ZONE

2018	Customers	January Purchased	January Sold	January % Loss	February Purchased	February Sold	February % Loss	March Purchased	March Sold	March % Loss	April Purchased	April Sold	April % Loss	Radio No.
00 Evergreen Rd	494					3,073,400								
01 Coolbrook	598					1,968,300								
06 Highway 151	257	2,400,000	1,022,800	57.4%	2,144,000	906,700								87502152
08 L'burg Road	233	1,527,000	1,065,000	30.3%	1,936,000	1,189,600		1,570,000			1,356,000			17288382
10 Mills Lane	284	2,413,000	971,200	59.8%	2,244,000	878,300		2,566,000			2,290,000			87512844
13 Bentwoods	336	2,430,800			2,030,000	1,389,000		1,757,900			1,774,800			
15 Benson Valley	17	141,600			119,100	103,600		74,300			80,500			
45 Green Wilson	431	1,707,000	1,473,900	13.7%	1,518,000	1,291,500		2,474,000			1,640,000			87441684
61 South Benson														875 6
Total	2650	23,402,000	11,630,000	50.3%	22,474,000	10,819,000	51.9%	15,227,000	12,923,000	15.1%	17,475,000	11,139,000	36.2%	

2018	Customers	May Purchased	May Sold	May % Loss	June Purchased	June Sold	June % Loss	July Purchased	July Sold	July % Loss	August Purchased	August Sold	August % Loss	
00 Evergreen Rd	494													
01 Coolbrook	598													
06 Highway 151	257	no read			no read			no read			no read			87502152
08 L'burg Road	233	1,564,000			1,601,000			1,561,000			1,778,000			17288382
10 Mills Lane	284	2,298,000			2241000			2,231,000			2,209,000			87512844
13 Bentwoods	336	1,940,600			1,592,600			1,586,600			1,752,800			
15 Benson Valley	17	115,700			124,400			139,000			140,300			
45 Green Wilson	431	2,011,000			1,988,000			1,883,000			1,942,000			87441684
61 South Benson														87507496
Total	2650	18,106,000	14,414,000	20.3%	15,472,000	14,143,000	8.6%	16,281,000	13,664,000	15.2%	16,273,000	14,854	8.7%	

2018	Customers	September Purchased	September Sold	September % Loss	October Purchased	October Sold	October % Loss	November Purchased	November Sold	November % Loss	December Purchased	December Sold	December % Loss	
00 Evergreen Rd	494													
01 Coolbrook	598													
06 Highway 151	257	no read			No read			No read			No read			87502152
08 L'burg Road	233	1,450,000			1,661,000			1,336,000			1,362,000			17288382
10 Mills Lane	284	1,397,000			1,567,000			1,595,000			1,945,000			87512844
13 Bentwoods	336	1,815,500			1,832,700			1,719,900			1,742,100			
15 Benson Valley	17	69,200			64,900			80,200			95,500			
45 Green Wilson	431	1,576,000			1,771,000			1,575,000			1,782,000			87441684
61 South Benson		bad			Bad			Bad			Bad			87507496
Total	2650	18,545,000	13,666,000	26.1%	16,938,000	14,853,000	12.2%	18,185,000	10,917	39.6%	17,318,000	11,884	31.4%	

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 27

Responding Witness: Brian Armstrong

Q-27. State whether the utility uses a system-wide hydraulic model to evaluate the pressure zones and flow in the utility's distribution system.

A-27. No. Farmdale recognizes the value of having a system-wide hydraulic model, but has not yet invested the funds to hire an engineering firm to prepare and calibrate a system-wide hydraulic model.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 28

Responding Witness: Brian Armstrong

Q-28. Does the utility manager regularly report the water loss reduction efforts to the water utility's board of commissioners? Provide copies of any written reports, memorandums, letters, emails, or minutes from January 1, 2018, to the date of the issuance of this Order that details the efforts of the utility manager in reducing water loss as reported to the water utility's board of commissioners.

A-28. Yes. Farmdale's Manager provides a copy of the PSC Monthly Water Loss Report to the Farmdale Board of Commissioners at each month's board meeting.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 29

Responding Witness: Brian Armstrong

Q-29. For the period from January 1, 2015, to the date of the issuance of this Order, discuss whether the water utility's board of commissioners has placed any deadlines or target dates on the utility for achieving a reduction in the amount of water loss.

A-29. Farmdale's Board of Commissioners has set a goal of reducing its water loss to a level that is 15% or less. It hopes to achieve this goal as soon as possible. The water loss was substantially reduced in 2018. The 2018 annual water loss was 28% (see attachments to Q-1).

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 30

Responding Witness: Brian Armstrong

Q-30. Provide a list of the utility management's five most critical projects, listed in order of priority, notwithstanding the opinions of the county judge/executive nor the opinions of the water district board of commissioners.

A-30. As Manager of Farmdale, my top five (5) critical projects are shown below:

1. **Reducing Number of Meters That Must Be Read Manually.** In 2012 and 2013, Farmdale replaced all its meters with "drive-by" radio read iPERL meters manufactured by Sensus. After "reading" the meters by "driving-by" the meters located throughout the entire distribution system, a report is generated that lists all the meter locations that were not "read" properly. The errant or missing meter "readings" could be the result of various factors, including the following: defective or worn-out battery, damaged wire leading from the digital readout device to the radio transmitter, damaged radio transmitter, frozen or broken meter, or various

other issues. Using this report, I then must return to each meter location where no digital reading was received (or an incorrect reading) and manually read each of these meters. It takes about two (2) days to perform the "drive-by" reading. Then it takes another two (2) or three (3) days to revisit the meter locations and manually read the balance of the meters. When I started working for Farmdale in 2018, there would be over 160 meters that would have to be manually read each month. Now, that number has been reduced to about 120 manual meter reads each month. If I had another worker, we could more quickly perform the necessary repairs (replacing batteries, transmitters, wires, meter replacements, etc.,) so the number of meters that must be read manually could be reduced to less than one (1%) percent.

2. **Installing Backflow Preventers**. Many of the meter installations do not have double check-valves (backflow preventers). I need to replace the meter setters with new setters that come with pre-installed backflow preventers. This will not reduce water loss, but it is a safety issue. Best utility practices dictate that all meter installations have backflow prevention devices.

3. **Meter Vault Repairs**. Many of the meter vaults need replacing because they were made of inferior, thin-walled material. As a result, the

vaults have become deformed and the meter lids do not fit properly. It is also difficult to operate the turn on and off valve located near the bottom of the vault.

4. **Replace All Lines in Edgewood Subdivision**. The entire water main in the Edgewood Subdivision (approximately one (1) mile) needs replacing. The water main in this subdivision is "thin-walled" pipe. It has been the source of many leak repairs in my short tenure with Farmdale.

5. **Replace All AC Pipe**. Farmdale's entire original distribution system consists of various sizes of AC pipe. I don't know the exact number of miles of AC pipe, but it has been estimated at 40 to 50 miles. This pipe is very old and brittle. It is very difficult to repair it. This would be my second highest priority project, but for the prohibitive cost of replacing the AC water mains.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 31

Responding Witness: Brian Armstrong

Q-31. Provide the total salary of the general manager/superintendent of the water utility for calendar years 2017 and 2018.

A-31. The former manager's salary for 2017 was $46,901. He retired on August 31, 2018. His salary for the first eight (8) months of 2018 was $33,189. Farmdale's current manager's salary is $20/hour.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 32

Responding Witness: Brian Armstrong

Q-32. Provide a copy of the most recent signed employment contract between the general manager/superintendent and the utility.

A-32. Farmdale's Manager does not have a written contract.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 33

Responding Witness: Brian Armstrong

Q-33. State the average age, with the high and low ages, of the utility's distribution mains.

A-33. Oldest water mains: 50 years

Newest water mains: 7 years

Average: 28 years

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 34

Responding Witness: Brian Armstrong

Q-34. "Service connection," as defined by 807 KAR 5:066(6), means the line from the main to the customer's point of service, and shall include the pipefittings and valves necessary to make the connection. State the average age of the utility's service connections.

A-34. Average age: 28 years

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 35

Responding Witness: Brian Armstrong

Q-35. Has the utility mapped the entire distribution area for service connections to include mapping of its system, and identifying parts of its system with repeated breaks?

A-35. Farmdale's entire distribution area has been mapped. Service connection lines are not shown on the map. Meter locations are shown, however. The map does not show areas with repeated breaks. Farmdale's Manager is aware that the Edgewood subdivision is the area with the most repeated breaks.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 36

Responding Witness: Brian Armstrong

Q-36. Provide a copy of the utility's policy for dealing with apparent theft of water.

A-36. Farmdale does not have a written policy regarding theft of water service. Its practice, however, is to lock or remove the customer's meter if theft of service has occurred.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 37

Responding Witness: Brian Armstrong

Q-37. Provide documentation of any request by the utility from January 1, 2017, to the date of the issuance of this Order to the county attorney or commonwealth attorney's office for the prosecution of any person for the theft of water.

a. State whether the utility provided information related to the request for prosecution to the county attorney or commonwealth attorney's office for this time frame.

b. If the response to Item 37a. above is confirmed, state to which office the utility provided the information, whether any action was taken on behalf of the utility to prosecute any person for theft of water, and provide copies of the documentation and correspondence related to the prosecution.

A-37.

a. Farmdale has not requested the County Attorney or Commonwealth's Attorney to prosecute any person for theft of water service.

b. N/A

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 38

Responding Witness: Brian Armstrong

Q-38. Provide the utility's policy for determining whether a leak adjustment to a customer's account is warranted and identify the person(s) that approve leak adjustments.

A-38. Farmdale's written Leak Adjustment Policy does **NOT** permit a customer's bill to be adjusted when a leak has occurred. Its written policy is part of its PSC-approved Tariff. The relevant tariff sheet is attached.

FOR Southwest Franklin County, Kentucky
Community, Town or City

P.S.C. KY. NO. 1

1st Revised SHEET NO. 16

Farmdale Water District
(Name of Utility)

CANCELLING P.S.C. KY. NO. 1

Original SHEET NO. 16

RATES & CHARGES

LEAK ADJUSTMENT POLICY

Farmdale Water District does not adjust a customer's bill when a leak has occurred. The utility incurs a significant cost for water and these costs must be recovered. Therefore, the customer will be charged for all water passing through the meter at the utility's regular schedule of rates. (T)

DATE OF ISSUE March 8, 2016
Month / Date / Year

DATE EFFECTIVE May 1, 2016
Month / Date / Year

ISSUED BY Clifford Jones
(Signature of Officer)

TITLE Chairman Board Commissioners

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION

IN CASE NO. _____ DATED _____

KENTUCKY
PUBLIC SERVICE COMMISSION

Aaron D. Greenwell
ACTING EXECUTIVE DIRECTOR

TARIFF BRANCH

Brent Kirtley

EFFECTIVE

5/1/2016

PURSUANT TO 807 KAR 5:011 SECTION 9 (1)

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 39

Responding Witness: Brian Armstrong

Q-39. State whether the utility's tariff permits the utility to adjust late charges when making a leak adjustment.

A-39. As stated in the response to Q-38, Farmdale does not make leak adjustments. If a customer is enrolled in a Payment Plan and is making payments according to the agreed schedule, late charges are not applied.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 40

Responding Witness: Brian Armstrong

Q-40. Provide a copy of the utility's most recent Leak Adjustment Worksheet that was used by the utility and explain what software is being used by the utility to generate the Leak Adjustment Worksheet. If the utility is using Microsoft Excel to generate the Leak Adjustment Worksheet, then provide a copy of the most recent Leak Adjustment Worksheet used by the utility in electronic format with all rows unprotected and all formulas intact.

A-40. N/A

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 41

Responding Witness: Brian Armstrong

Q-41. State whether the utility has conducted a comprehensive water audit, and if so, provide a copy of the most recent water audit.

A-41. No.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 42

Responding Witness: Brian Armstrong

Q-42. Provide a copy of the utility's procedure for monitoring and documenting withdrawals from the utility's distribution system by fire departments. If no document exists, explain the process in detail.

a. For each fire department that made a withdrawal from the utility's system from January 1, 2018, to the date of the issuance of this Order, provide a copy of the fire department's estimate of its withdrawal.

b. For any instance in which a fire department failed to provide an estimate of withdrawal from January 1, 2018, to the date of the issuance of this Order, state the actions the utility implemented to correct the failure.

c. Provide the date on which the utility last imposed a penalty on a fire department for the fire department's failure to submit a quarterly report on its water usage.

d. Provide a sample copy of each type of report form that the utility provides to fire departments.

e. Provide the fourth quarter of the 2018 fire protection water usage, by month, and describe the formula relied upon, identifying all variables, and all assumptions and workpapers utilized to produce this information.

A-42.

a-e: Fortunately, there is only one fire station in Farmdale's service area. Farmdale has a good working relationship with this fire department. The fire department provides monthly reports to Farmdale.

The water usage reports for the fourth quarter of 2018 and the first quarter of 2019 are attached.

FRANKLIN COUNTY FIRE DEPARTMENT
975 CHENAULT RD.
FRANKFORT, KY. 40601

WATER USAGE REPORT
MONTH Aug - Dec 2018
WATER DISTRICT Formdell
STATION LOCATION Sta 9

DATE	AMOUNT USED
Aug	500 back flush
Oct	500 back flush
Nov	20,000 Gallons Assists EM
Nov	18,000 Gallons Assists EM
Nov	500 back flush

FRANKLIN COUNTY FIRE DEPARTMENT
975 CHENAULT RD.
FRANKFORT, KY. 40601

WATER USAGE REPORT
MONTH Jan 2019
WATER DISTRICT Fairdale
STATION LOCATION Evergreen Rd

DATE	AMOUNT USED
Jan 2019	4500 gal
	+ 1000
	5500

FRANKLIN COUNTY FIRE DEPARTMENT
975 CHENAULT RD.
FRANKFORT, KY. 40601

WATER USAGE REPORT
MONTH Feb 2019
WATER DISTRICT Fairdale
STATION LOCATION Evergreen Rd

DATE	AMOUNT USED
Feb 2019	1000 gal

FRANKLIN COUNTY FIRE DEPARTMENT
975 CHENAULT RD.
FRANKFORT, KY. 40601

WATER USAGE REPORT
MONTH March 2019
WATER DISTRICT Farmdale
STATION LOCATION Evergreen Rd

DATE	AMOUNT USED
March 2019	1000gal

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 43

Responding Witness: Brian Armstrong

Q-43. Explain how the utility accounts for flushing when determining water loss for its system.

A-43. Farmdale recently purchased a hydrant meter to measure the volume of water used in flushing its system.

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 44

Responding Witness: Brian Armstrong

Q-44. Provide the type of flushing equipment that the utility uses.

A-44. Hydrant meter

FARMDALE WATER DISTRICT

CASE NO. 2019-00041

Response to Commission's Request for Information

Question No. 45

Responding Witness: Brian Armstrong

Q-45. Provide the utility's system flushing records, by month, from January 1, 2018, to the date of the issuance of this Order, and describe the formula relied upon, identifying all variables, and all assumptions and workpapers utilized to produce this information.

A-45. Flushing records are attached.

Farmdale Water District
Monthly Flushing Log

Month		Monthly Flushing Log	
Year	2018		
Date	**Location**	**Minutes Flushed**	**Gallons Flushed**
Nov 6	Davenports	10 mins	
	1671 Cardwell	20 mins	
	1823 Cardwell	5 mins	
	2261 Cardwell	5 mins	
	2296 Cardwell	5 mins	
Nov 8	1671 Cardwell		760 gallons
Nov 9	1671 Cardwell	15 mins	3,778 gallons
Nov 21		20 mins	2663 gallons
Dec 12	Jones LN	60 mins	[redacted]
Dec 22	Raven Wood		10,000 gallons
Gallons Flushed for Month			**0**

CERTIFICATE OF SERVICE

In accordance with 807 KAR 5:001, Section 8, I certify that Farmdale Water District's electronic filing of this Response is a true and accurate copy of the same document being filed in paper medium; that the electronic filing was transmitted to the Public Service Commission on April 12, 2019; that there are currently no parties that the Public Service Commission has excused from participation by electronic means in this proceeding; and that an original paper medium of this Response will be delivered to the Public Service Commission within two business days.

Damon R. Talley